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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/560,391

04/11/2006

Jacques Orban

21.1179

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11/07/2007

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Schlumberger Technology Corporation  
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EXAMINER

ANDRISH, SEAN D

ART UNIT

PAPER NUMBER

3672

MAIL DATE

DELIVERY MODE

11/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/560,391

### Applicant(s)

ORBAN, JACQUES

### Examiner

Sean D. Andrish

### Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 6, 9, 19, and 20 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 10 - 18, and 21 - 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 20051213.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because applicant does not clearly illustrate the relationship between the wings 76, 78 and the inner shaft 74 in Figure 13. Furthermore, there are several unidentified components in Figure 13, including the structures above the circle containing wing 76 and ring 80. Clarification is needed. Also regarding Figure 13, it appears that there are several figures grouped as Figure 13. The examiner suggests renumbering the distinct portions of Figure 13 as Figure 13A, Figure 13B, etc. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

2. Claim 3 is objected to because of the following informalities: Claim 3 recites "wherein the connecting arms". The examiner interprets the "connecting arms" to be equivalent to "the connecting member" as recited in claim 2. If this is not accurate, the phrase "the connecting arms" of claim 3 lack antecedent basis in the claims. Appropriate correction is required.
3. Claims 19 – 24 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claims 19, 20, 22, and 23 are dependent upon any preceding claim. However, claims 4, 9, and 17 are dependent upon one of two possible claims. Multiple dependent claims cannot be dependent upon another multiple dependent claim. Claims 21 and 24 are improper multiple dependent claims because they are each dependent upon a multiple dependent claim that is dependent upon another multiple dependent claim. See MPEP § 608.01(n). To expedite the examination process, the claims 19 – 24 will be treated as being dependent upon claim 1.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 – 6, 9, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendershot (5,041,060).

Regarding claim 1, Hendershot discloses A drilling tool comprising a series of coaxial ring members (15 – 20) connected together such that adjacent ring members (i.e. 18, 19) are

flexible in an axial plane relative to each other; characterized in that: each ring member (15 – 20) is connected to an adjacent ring member (15 – 20) by connecting member (21) arranged to transmit torque therebetween; and axial supports (21) extend between adjacent ring members so as to transmit axial loads therebetween ([Fig. 1]; column 2, lines 27 – 64).

Regarding claim 2, Hendershot further discloses a connecting member (21) and axial supports (21) allow adjacent ring members (15 – 20) to bend in one axial plane while remaining stiff in another axial plane offset by up to 90° [Figs. 1 and 6].

Regarding claim 3, Hendershot further discloses connecting arms (21) and axial supports (21) are arranged such that the bending plane on one side of a ring member (15 – 20) is different to that on the other side [Fig. 6].

With regard to claim 4, Hendershot further discloses a connecting member (21) and axial support (21) are constituted by the same physical structure [Fig. 1].

Regarding claim 5, Hendershot further discloses at least two axial links (21) extending between circumferentially aligned points on adjacent ring members (15 – 20) [Fig. 1].

Regarding claim 6, Hendershot further discloses the connection point of links (21) extending axially from one side of a ring member (15) are offset from those extending in the axial opposite direction by up to 90° (column 2, lines 55 – 58).

Regarding claim 9, Hendershot further discloses a connecting member (21) and axial support (30 -33) are constituted by separate physical structures [Fig. 6].

With regard to claim 19, Hendershot further discloses various functional structures (15 – 20; 21; 23; 24; 30 – 33) are defined by providing cutouts in a tubular member (11) [Fig. 1].

Regarding claim 20, Hendershot further discloses adjacent ring members define a cell that is flexible in an axial plane, and the axial planes in adjacent cells are offset by a predetermined angle of up to 90° ([Fig. 5]; column 3, lines 36 – 41).

*Allowable Subject Matter*

6. Claims 7, 8, 10, 18, and 21 – 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regard to claim 7, the novel concept is the connection point on one ring being connected to another ring by a pair of inclined links. Claim 8 is dependent upon claim 7 and thus meets the novelty requirement.

Regarding claim 10, the novel subject matter is the use of inter-engaging teeth projecting from the adjacent ring members.

Claim 18 meets the novelty requirement through the use of a position of the axial support member which is positioned away from the ring members so as not to be contacted when compression is applied.

Regarding claim 21, applicant's use of concentric rings in combination with the claimed drilling tool is considered to be a novel arrangement.

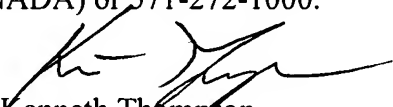
Regarding claims 22, 23, and 24, the novel subject matter is claiming a fluid conduit (claim 22), a drill bit and shaft (claim 23), and a rotary motor and drill shaft (claim 24) in combination with the claimed drilling tool.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean D. Andrish whose telephone number is (571) 270-3098. The examiner can normally be reached on Mon - Fri, 7:30am - 5:00pm, Alternate Fri off, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Kenneth Thompson  
Primary Patent Examiner  
Art Unit 3672

SDA  
11/5/2007